

**REMARKS**

Reconsideration of this application is respectfully requested in light of the foregoing amendments and the following remarks.

Claims 1 has been amended for reasons unrelated to patentability, including at least one of: to explicitly present one or more elements implicit in the claim as originally written when viewed in light of the specification thereby not narrowing the scope of the claim, to detect infringement more easily, to enlarge the scope of infringement, to cover different kinds of infringement (direct, indirect, contributory, induced, and/or importation, etc.), to expedite the issuance of a claim of particular current licensing interest, to target the claim to a party currently interested in licensing certain embodiments, to enlarge the royalty base of the claim, to cover a particular product or person in the marketplace, and/or to target the claim to a particular industry.

**I. The Anticipation Rejection**

Claims 1, 2, 4-12, and 14-20 were rejected as anticipated under 35 U.S.C. §102(b). In support of the rejection, McEwan et al. (U.S. Patent No. 5,804,921) was cited. This rejection is respectfully traversed.

McEwan et al. fails to establish a *prima facie* case of anticipation. See MPEP 2131. To anticipate expressly, the “invention must have been known to the art in the detail of the claim; that is, all of the elements and limitations of the claim must be shown in a single prior art reference, arranged as in the claim”. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001). The single reference must describe the claimed subject matter “with sufficient clarity and detail to establish that the subject matter existed in the prior art and that its existence was recognized by persons of ordinary skill in the field of the invention”. *Crown Operations Int'l, LTD v. Solutia Inc.*, 289 F.3d 1367, 1375, 62 USPQ2d

1917, 1921 (Fed. Cir. 2002). Moreover, the prior art reference must be sufficient to enable one with ordinary skill in the art to practice the claimed invention. *In re Borst*, 345 F.2d 851, 855, 145 USPQ 554, 557 (C.C.P.A. 1965), *cert. denied*, 382 U.S. 973 (1966); *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354, 65 USPQ2d 1385, \_\_\_ (Fed. Cir. Jan. 6, 2003) (“A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled.”).

Claim 1, from which claims 2-11 depend, recites “... a pulse-forming circuit coupled to the nonlinear transmission line, the pulse-forming circuit including a reverse-biased diode **coupled in series with** the output of the nonlinear transmission line circuit.” McEwan et al. does not teach expressly or inherently “a reverse-biased diode coupled in series with the output of the nonlinear transmission line circuit.” Accordingly, it is respectfully submitted that the rejection of claim 1 is unsupported by McEwan et al. and should be withdrawn. Also, the rejection of claims 2 - 11, each ultimately depending from independent claim 1, is unsupported by McEwan et al., and also should be withdrawn.

Claim 12, from which claims 13-15 depend, recites “...a pulse-forming circuit coupled to the nonlinear transmission line; **a gate coupled to the pulse-forming circuit; an optical modulator coupled to the gate; and a laser coupled to the modulator.**” McEwan et al. does not teach expressly or inherently “a pulse-forming circuit coupled to the nonlinear transmission line; a gate coupled to the pulse-forming circuit; an optical modulator coupled to the gate; and a laser coupled to the modulator”. Accordingly, it is respectfully submitted that the rejection of claim 12 is unsupported by McEwan et al. and should be withdrawn. Also, the rejection of claims 13 - 15, each ultimately depending from independent claim 12, is unsupported by McEwan et al., and also should be withdrawn.

Claim 16, from which claims 17-20 depend, recites “...electrically modulating an output signal from a pulse-forming circuit coupled to a nonlinear transmission line; and **modulating an output signal from the pulse-forming circuit with a laser-generated signal to provide an**

**optical signal”** McEwan et al. does not teach expressly or inherently “electrically modulating an output signal from a pulse-forming circuit coupled to a nonlinear transmission line; and modulating an output signal from the pulse-forming circuit with a laser-generated signal to provide an optical signal.” Accordingly, it is respectfully submitted that the rejection of claim 16 is unsupported by McEwan et al. and should be withdrawn. Also, the rejection of claims 17 - 20, each ultimately depending from independent claim 16, is unsupported by McEwan et al., and also should be withdrawn.

## II. The Obviousness Rejection

Claims 3 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over various combinations of McEwan et al. (U.S. Patent No. 5,804,921) in view of Black et al. (U.S. Patent No. 5,352,994), Geis et al. (U.S. Patent No. 5,825,240), and/or Kleveland et al. (U.S. Patent No. 5,969,929). These rejections are respectfully traversed.

None of the cited references, either alone or in any combination, establish a *prima facie* case of obviousness. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure.” See MPEP § 2143.

Claim 1, from which claim 3 depends, cites “...a reverse-biased diode coupled in series with the output of the nonlinear transmission line circuit.” None of the cited references teach “...a reverse-biased diode coupled in series with the output of the nonlinear transmission line circuit”.

Claim 12, from which claim 13 depends, cites “...a pulse-forming circuit coupled to the nonlinear transmission line; **a gate coupled to the pulse-forming circuit; an optical modulator coupled to the gate; and a laser coupled to the modulator**”. None of the cited references teach “...a pulse-forming circuit coupled to the nonlinear transmission line; a gate coupled to the pulse-forming circuit; an optical modulator coupled to the gate; and a laser coupled to the modulator”.

Since the cited reference (or references when combined) do not teach or suggest all the claim limitations, no *prima facie* rejection of claims 3 or 13 has been presented. Consequently, reconsideration and withdrawal of these rejections is respectfully requested.

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### CONCLUSION

It is respectfully submitted that, in view of the foregoing amendments and remarks, the application as amended is in clear condition for allowance. Reconsideration, withdrawal of all grounds of rejection, and issuance of a Notice of Allowance are earnestly solicited.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. §1.16 or §1.17 to Deposit Account No. 50-2504. The Examiner is invited to contact the undersigned at 434-972-9988 to discuss any matter regarding this application.

Respectfully submitted,

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